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ABSTRACT

The Museum Computer Network (MCN) was formed to convert all the systematic information in museum files and archives from written to machine-readable form. The principles, practice, membership, computer programs, history, and organization of MCN are described in an introductory article. Following this is a bibliography of reference to MCN and to GRIPHOS, the computer program for museum information. The document concludes with an article by David Vance, president of MCN entitled "The Unfinished Story of the Museum Computer Network." In this article he traces the history of MCN and describes development of new concepts in classifying and recording museum information. Membership, financial aspects, and plans for the future of MCN are summarized. (CH)

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# MUSEUM COMPUTER NETWORK, INC.

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## OBJECTIVES

The Museum Computer Network, Inc. (MCN) was formed to meet a specific, unforeseen challenge to the museum community and turn that challenge to advantage.

The challenge is the need to convert all the *systematic* information in museum files and archives from written to machine-readable form.

The opportunity inherent in this challenge is to make collections and the information associated with them more accessible, the better to serve the museums' public. This can be accomplished through museums' adherence to common standards in the conversion of information.

Information converted to machine-readable form, or recorded in that form, can be indexed automatically, searched, sorted, merged and analyzed by machine and transmitted by wire. The systematic portions of museum publications can be prepared and even set in type under computer control. Information can be disseminated, when desired, without publication.

## PRINCIPLES

MCN has recognized from its inception that museums are diverse in size, interests, means and character. Their records reflect and must always reflect this diversity. It is manifest in the vocabulary, punctuation and language as well as in the size and content of museum files.

MCN's first task, therefore, was to find and describe the underlying organization common to all museum records. This was essential if standards adopted by MCN and reflected in

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computer programs for museum use were not to regiment users and inhibit their pursuit of individual goals.

Such underlying structure, common not only to museum records but to many others as well, has, in fact, been described; and, on the basis of this analysis, computer programs have been developed to store, retrieve and manipulate information that, in appearance, may resemble traditional museum records but also carries the internal references necessary for electronic processing.

## PRACTICE

MCN's method is to examine the greatest possible variety of museum files and archives, searching for apparent difficulties. This is done in closest possible collaboration with museum staffs and may be carried to the point of data conversion, where the museum is prepared to take that step. Experience has shown that the solution to every problem finds application elsewhere, often in a surprisingly different context. Often it is possible to establish contact among museum professionals facing similar problems, who would not otherwise know of one another's work. To the extent that funds permit, solutions are published or otherwise disseminated to the museum community.

MCN also collects published and unpublished data about independent projects in electronic cataloging and indexing and maintains liaison with organizations that share its objectives, such as the ICOM Committee on Documentation and the Museum Data Bank Committee.

## MUSEUMS

MCN's services are available not only to institutions calling themselves museums but to all nonprofit organizations that keep records similar to those of museums or of interest to museums. These include surveys of sites and monuments, photoarchives, document collections and film libraries. At present writing (April 1974) MCN has not had the opportunity to serve herbaria, zoos or botanical gardens. It is prepared to help them as the need arises.

## SYSTEMATIC CONTENT

It is not desirable to convert all the information in museum files. Letters, memoranda, clippings, detailed conservation reports and similar documents, in discursive form, remain in "jacket files," *indexed* by the systematic records. The latter include information usually found on accession cards, catalog cards and in various cross-reference files. It is these files that classify the materials recorded and lead researchers to pertinent objects, collections and information resources.

## MEMBERSHIP

MCN is a membership organization of nonprofit institutions and its services are available only to members. Membership is open to all qualified institutions anywhere in the world and is obtained by a letter of application, approval of the Board of Directors and payment of dues. Institutions may join singly or in consortial groups.

*Adjunct Membership* is a means of supporting the Network and is intended for institutions not yet able to begin data conversion. It entitles the member to receive all mailings and to be represented at Corporation Meetings. Representatives of individual Adjunct Members may not vote at Corporation Meetings but representatives of consortial Adjunct Members are entitled to one vote for the entire consortium. Annual dues for Adjunct Membership are $50. for a single institution and $250. for a consortium.

*Active Membership* entitles each member to all the assistance, by way of consultation, that MCN is able to render, by telephone, mail or personal visit. A consortial group is considered to be *one* member and receives consultation collectively. This service is free except in the rare case where travel is necessary. Active members are entitled to use the GRIPHOS programs (see below) for a service fee in addition to their dues. Each Active Member has one vote at Corporation Meetings. Dues for Active Membership are $250. annually for

Individual members and, for consortia, $250. plus $50. for each member of the consortium in excess of five.

## COMPUTER PROGRAMS

Although MCN members are expected to adhere to certain principles in the conversion of their records to insure that their files will, in principle, be able to merge with those of other museums, members are free to use any computer programs compatible with these principles. They are not required to use programs distributed by MCN.

MCN is sole distributor of the museum version of programs known, collectively, as GRIPHOS (General Retrieval and Information Processor for Humanities Oriented Studies), developed since 1967 by Prof. Jack Heller of the State University of New York at Stony Brook. Program development has been in collaboration with MCN and its member institutions and is expected to continue indefinitely, making the programs ever more responsive to museum needs.

Each Active Member is entitled to the GRIPHOS programs and to full program support, including attention to program "bugs," consultation with respect to operation, and timely receipt of program revisions and operating manual revisions. Programs are supplied by mail on magnetic tape in the form of "load modules." The annual service fee is $750 for an individual Member. Fees for consortia vary according to the number and size of member institutions.

Whenever possible, museums will be invited to send museum and computing center personnel to training workshops in data preparation, operating procedures and methods of attaching programs of their own to the GRIPHOS modules. Such training is not a necessary prerequisite for use of the programs.

The GRIPHOS programs written in F-level PL/1 and 360/370 Assembler Language require an IBM 360 or 370, operating under OS or VS, with at least one partition of 256K or larger available and with 2314 type or 3330 type disks. Data input is by any method locally available. At present writing processing is in "batch mode" only.

These programs impose no restrictions as to record or field length, sequence of input or subsequent record revision. Retrieval is by direct access with optional use of inverted indices. Any available character set may be used, including diacritical marks. The form in which records are displayed or printed may differ from the normalized form used internally for sorting and searching. The system allows, too, for "self-defining" record structure, so that the record of a complex entity with individually described parts, such as a building, excavation site, motion picture, or "colony" of animals, may follow the structure of the thing described *without* prior knowledge of that structure. The programs do not contain a statistical package but provide for communication of retrieved data to statistical programs of the users' choice.

## INFORMATION EXCHANGE

Although member institutions (using GRIPHOS or other programs) are expected to maintain converted data in a form that can be merged with others' records, members make *no* automatic commitment to release data from their files to others. Pairs or groups of institutions are free to make private arrangements for information exchange. In such cases, the GRIPHOS programs will permit the automatic exclusion of specified categories of information.

## HISTORY

The Museum Computer Network, Inc., is successor to an unincorporated consortium formed in 196[illegible] by the National Gallery of Art and sixteen New York City museums. In 1968 and 1969 this group, with financial support from the Old Dominion Foundation and the New York State Council on the Arts, conducted an experiment in which records from the existing files of member museums were converted, without change in their appearance, and merged to form a coherent,

indexed union catalog. The conversion utilized an early version of the GRIPHOS programs. The success of this experiment led two member institutions (The Museum of Modern Art and the Metropolitan Museum of Art) and one outside the original group (The Arkansas Archeological Survey) to adopt the MCN information system and programs and to begin conversion of their catalogs.

From mid-1970 until after its incorporation in 1972 MCN had no staff or funds and was operated by members of its Administrative Committee. During this time some museums became inactive while others, throughout the United States, associated with MCN. The Museum of Modern Art completed conversion of its art catalog and continued with the holdings of its Department of Film. The Florida State Division of Archives, History and Records Management joined the Network and began work on an inventory of historic and archeological sites.

In 1972 the need for full scale operation led the Administrative Committee to dissolve the consortium, form the present corporation, establish the dues structure described above and seek renewed financial support.

In February, 1974, MCN, with twenty institutional members throughout the United States and with the financial support of the CBS Foundation, moved its headquarters from The Museum of Modern Art to the State University of New York at Stony Brook. Under an agreement with the University it shares staff, facilities and space with the University's Center for Contemporary Arts and Letters. Its operations are directed by David Vance, President of MCN.

## ORGANIZATION

The Museum Computer Network, Inc. is a corporation under Section 402 of the Not-For-Profit Corporation Law of the State of New York. The Internal Revenue Service has ruled MCN tax-exempt and entitled to receive tax-deductible contributions.

MCN is governed by a nine-member Board of Directors, of whom three are elected each year to serve for three-year terms. The present Directors are:

- J. Carter Brown, Director, National Gallery of Art
- John E. Buchanan, Special Assistant to the Director The Metropolitan Museum of Art
- Allan D. Chapman, Librarian, Museum of Primitive Art
- Robert G. Chenhall, Executive Director, Museum Data Bank Committee
- Frederick J. Dockstader, Director, Museum of the American Indian, Heye Foundation
- Richard H. Koch, Director of Administration, The Museum of Modern Art
- James F. Mello, Assistant Director, National Museum of Natural History, Smithsonian Institution
- David Vance, Visiting Associate Professor of Arts and Sciences, State University of New York at Stony Brook
- William D. Wilkinson, Director, The Mariners' Museum, Newport News

Inquiries and communications are welcome. Please use the address or telephone number shown on the outside of this folder.

## BIBLIOGRAPHY


Chenhall, Robert G., *Computerized Museum Catalogs,* American Association for State and Local History, Nashville, 1974

IBM, *Building a Collection Data Bank at Museum Computer Network,* Application Brief GK 20-0370

IBM, *Computers in the Museum,* Application Manual GE 20-0406

Vance, David, "Museum Computer Network, the Second Phase," *Museum News.* v.48, no. 9, May 1970, pp. 15-20

_____, "Museum Data Banks," *Information Storage and Retrieval.* v.5, 1970, pp. 203-21

_____and Jack Heller, "Structure and Content of a Museum Data Bank," *Computers and the Humanities.* v.6, no. 2, Nov. 1971, pp. 67-84

_____, "Museum Computer Network, the Third Phase," *Museum News.* v.51, no. 8, April 1973, pp. 24-27

Bibliography

Published references to GRIPHOS, the Museum Computer Network or both


Abbey, Scott. "GRIPHOS as a Relational Data Base System." Diss. State University of New York, Stony Brook, 1975.

Anon. "Museum Computer Network," ed. James A. Peters. MUDPIE no. 11, August 1970, pp. 1-4.

Association of Systematics Collections. "The Museum Computer Network." ASC Newsletter v. 2, no. 4, Autumn 1974, pp. 10-11.

Chenhall, Robert G. "The Archeology Data Bank: a Progress Report." Computers and the Humanities v. 5, no. 3, January 1971, pp. 156-169.

--Museum Cataloging in the Computer Age, Nashville: American Association for State and Local History, 1975, pp. 120-149 and passim.

--"Museum Information Networks." Museum Data Bank Research Report no. 5. Museum Data Bank Committee, Rochester, 1975, pp. 1-19.

--and Sandra Scholtz. "Archeological Data Banks in Theory and Practice." American Antiquity, v.41, no. 1, January 1976.

Cole, Wilford P. "Computers: Second Thoughts on the Second Phase." Museum News, v.48, no.10, June 1970, pp. 19-20 and 50.

Dauterman, Carl C. "Sevrès Porcelain Project - Hard Paste Index." ICRH Newsletter, v.3, no.5, 1968. Institute for Computer Research in the Humanities, New York University.

Ellin, Everett. "A Computer-Based Information System for the American Museum Community." 63rd Annual Meeting of the American Association of Museums. Washington, 1968, pp. 25-30.

Ellin, Everett. "Museums and Computers: An appraisal of New Potentials." Computers and the Humanities v.4, no.1, Sept. 1969, pp. 25-30.

Eskind, Andrew H. "IMP Finds PIX PDQ with IBM." Photomethods, v.18, no.10, October 1975, pp. 34-36, 52-53.

Fryman, Frank B., Jr. "On the Implementation of a Computerized Museum Catalogue for Archaeological and Historical Data." Museum Registration Methods, Dorothy H. Dudley and Irma B. Wilkinson. Washington: American Association of Museums, 3rd ed., planned 1976.

Heller, Jack. "Data Networks." SPECTRA (newsletter ) v.2, no.2, April 1975. Center for Contemporary Arts and Letters, State University of New York, Stony Brook.

--"On Logical Data Organization, Card Catalogs, and the GRIPHOS Management Information System." Museum Data Bank Research Report no.3. Museum Data Bank Committee, Rochester, 1974, pp. 1-21.

--"Permuted Indexes and Catalog Cards Constructed from the Museum Computer Network's Data Bank." ICRH Newsletter v.4, no. 10, June 1969, pp. 3-6. Institute for Computer Research in the Humanities, New York University.

--"A Set of Character String Manipulation Procedures in PL/1." Technical Report no. 14, 1973. Department of Computer Science, State University of New York, Stony Brook.

--"The Value of a Computerized Data Bank as an Adjunct to a Museum Card Catalogue." Computers and their Potential Applications in Museums (conference). Metropolitan Museum of Art, New York, 1968, pp. 307-22.

International Business Machines Corporation. "Building a Collection Data Bank at Museum Computer Network." Application Brief GK20-0370. White Plains, 1970, pp. 1-8.

-- "Computers in the Museum." Application Manual GE20-0406. White Plains, 1973,pp. 1-69.
Lipka, Stephen E. "Queries and Relations in the GRIPHOS System." Diss. State University of New York, Stony Brook, 1975.
Liu, Shaun Shao-Jung. "A Grammar Driven Data Translation Model." Diss. State University of New York, Stony Brook, 1975.
-- and Jack Heller. "A Record Oriented Grammar Driven Data Translation Model." Workshop on Data Translation, Access and Control. Association for Computing Machinery, SIGMOD, New York, 1974.
Lowy, Harvey D. "Architecture of Information Retrieval Systems." Technical Report no. 37, 1974, pp. 1-84. Department of Computer Science, State University of New York, Stony Brook.
Mello, James F. Article on computer storage and retrieval of the data of synonymy, in preparation, Museum Data Bank Research Report no. 6. Museum Data Bank Committee, Rochester, 1976.
Meyer, Karl E. "The Plundered Past: III - Casino Palace and Slum." The New Yorker, April 7, 1973,pp. 96-129. (ref. to MCN pp. 119-120.)
Scheuermann, Peter and Jack Heller. "A View of Logical Data Organization and its Mapping to Physical Storage." Third Texas Conference on Computing Systems, 1974.
Scholtz, Sandra. "Data Structure and Computerized Museum Catalogs." Museum Data Bank Research Report no.2. Museum Data Bank Committee, Rochester, 1974, pp. 1-8.
Suchoff, Benjamin. "A GRIPHOS Application of Bartok's Turkish Folk Musical Material" SPECTRA Publication, 1975, pp. 1-14. Center for Contemporary Arts and Letters, State University of New York, Stony Brook.
Vance, David. "Computers and Registration." Museum Registration Methods, Dorothy H. Dudley and Irma B. Wilkinson. Washington: American Association of Museums and Smithsoniam Institution, 2nd ed., 1968, pp. 283-9.
-- "Computer Techniques in Museum Registration." 64th Annual Meeting of the American Association of Museums. Washington, 1969,pp. 116-32.
-- "A Data Bank of Museum Holdings." ICRH Newsletter v.4, no. 7, March 1969, pp. 3-7. Institute for Computer Research in the Humanities, New York University.
-- "Growth of an Information System." Bulletin of the American Society for Information Science v.2, no.5, December 1975, pp, 12- 14.
-- "McNews." SPECTRA,1974 to date. Center for Contemporary Arts and Letters, State University of New York, Stony Brook.
-- "Manual for Museum Computer Network Data Preparation and Museum Computer Network Tag Glossary." SPECTRA Publication, 1975, bound together, pp. 1-33 and pp. i-ix and 1 -76. Center for Contemporary Arts and Letters, State University of New York, Stony Brook.
-- "Museum Computer Network." XLI International Congress of Americanists, Mexico City, 1974, in prepartion.
-- "Museum Computer Network: Progress Report." The Museologist no.135, December 1975, pp. 3-10. Northeast Museums Conference, Buffalo.
-- "Museum Computer Network: the Second Phase." Museum News v.48. no.9, May 1970, pp. 15-19.
-- "Museum Computer Network: the Third Phase." Museum News v.51, no.8, April 1973, pp. 24-27.
-- "Museum Data Banks." Information Storage and Retieval, v.5, 1970, pp. 203-211,

-- "Networking in the Arts: a paper at the panel on Networks in Museums, Arts and Humanities at the Special Libraries Association Conference." Special Libraries Association Bulletin, Fall 1975, pp. 7-10.
-- "Organization Profile: Museum Computer Network, Inc." Information News and Sources v. 7, no. 5, May-June 1975, pp. 157-159 and Inside Information, ed. Marilyn G. McCormick, New York: Science Associates, in preparation.
-- and Jack Heller. "Structure and Content of a Museum Data Bank." Computers and the Humanities v. 6, no.2, November 1971, pp. 67-84.
-- "The Unfinished Story of the Museum Computer Network." EDUCOM v. 10, no. 3, Fall 1975, pp. 8-11.
-- "What are Data?" Museum Data Bank Research Report no. 1. Museum Data Bank Committee, Rochester, 1974, pp. 1-10.
Varveris, Therese. "The Computer and the Work of the Registrar." Museum Registration Methods, Dorothy H. Dudley and Irma B. Wilkinson. Washington: American Association of Museums, 3rd ed., planned 1976.

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# The Unfinished Story of the Museum Computer Network

David Vance

Although no one realized it at the time, the mid-sixties ushered in the close of a golden age for museums, an age in which money was no object, optimism prevailed, and it was possible to think of making open-ended commitments to undertakings that promised real and lasting benefit. Near the end of that time, the electronics industry produced the so-called third-generation computer, a class of machine that promised real and lasting benefits to the world's museums and to the scholars who used them. For the first time since collecting began, it was conceivable that large collections might actually be indexed and materials relevant to any investigation found — not haphazardly, but accurately — in a remarkably short period of time. There were many in the museum profession who grasped the implications at once,[1] but the methods for implementation were not at all obvious, nor was the urgency.

## Beginnings of MCN

To the best of our knowledge, the chain of events leading to the formation of the Museum Computer Network began with Dr. Carl Dauterman's efforts to interpret the cryptic underglaze markings found on Sèvres porcelain, using eighteenth-century factory records as his key. The number of combinations he had to consider proved overwhelming,[2] and he turned for advice to IBM. Dr. Edmund A. Bowles of IBM referred Dauterman to Professor Jack Heller, who was then laying the foundations of the data management system called GRIPHOS (General Retrieval and Information Processor for Humanities Oriented Studies). Without thinking specifically of museums, Heller was moving to apply the expanded capabilities of third-generation machines to the broad spectrum of text processing needed by humanists. Visiting Dauterman at the Metropolitan Museum of Art, Heller saw the endless ranks of card files documenting a quarter of a million works of art and met the man then in charge of these files, Mr. William D. Wilkinson.

Heller and Wilkinson came to be prime movers in the three crucial events that followed. One was the historic conference, "Computers and Their Potential Applications in Museums," held at the Metropolitan Museum of Art in April, 1968, organized by Wilkinson and supported by a grant from IBM. It caused the museum profession as a whole to think and talk about information processing, and its published proceedings became the basic text for a new discipline.[1]

A slightly earlier event was the formation of a consortium called The Museum Computer Network. It was the result of a series of four meetings of New York City museum directors and assistant directors held at the Whitney Museum of American Art in the fall of 1967. The extent of the intellectual spadework necessary before museum inventories could be indexed and merged was not yet apparent; participants in these meetings envisioned immediate establishment of a "transmission network" of linked computers at specific locations in the city. Substantial funding was requested from a major foundation but was not granted.

The original MCN included the National Gallery of Art and fifteen New York City museums. Funding for a feasibility study only was provided by the New York State Council on the Arts and the Old Dominion Foundation. Headquarters were established at The Museum of Modern Art, and Mr. Everett Ellin, until then Assistant Director of the Solomon R. Guggenheim Museum, became Executive Director.

## Colloquium of Museum Information Specialists

The last of the three events was actually the first in time. An informal colloquium

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was formed in February, 1967, and met weekly with Professor Heller throughout the spring and summer. Attendance varied, but there were a half-dozen regulars, all middle-ranking staff members of the Metropolitan Museum of Art and The Museum of Modern Art. Essentially, they were the museum's information technicians, individuals directly and intimately concerned with formal inventory and catalogue records. Wilkinson, who is now Director of the Mariners' Museum, Newport News, and a Director of Museum Computer Network, Inc., was one of the regulars, as was the author of this article.

In retrospect, it is hard to see how the accomplishments of this colloquium can be overvalued. One hard-won achievement was the opening of communications – by the summer of 1967, there was a nucleus of museum personnel who could talk to information scientists, and there was at least one information scientist who could talk to museum people. Equally basic was the mutual recognition that anything logical was now possible. It followed that no concession need be made to the current state of either art: we could define an ideal and then set out to find the way to it.

This attitude led to the acceptance of certain assumptions that were startling at the time and are still not routine. No restrictions were to be placed upon the size, sequence, or vocabulary of museum records or any component parts of the records. No restriction was to be placed upon the form of museum records: it would remain free to mimic the unpredictable forms of the things catalogued. No duplication of recorded data would be imposed. Local variations of capitalization, punctuation, and word order would be accepted without being allowed to affect lexical sorting and searching. No museum would be obliged to recatalogue before computerizing, but each would be given the means to normalize records after computerization. All except the last were possible using traditional card records. Therefore, there had to be ways to perform them all by computer, and, of course, ways have been found.

More important, the curse of hierarchical classification would be lifted. Retrieval would be by intersection of sets; thus, every recorded characteristic and every combination thereof could be used with equal ease to identify materials wanted for any purposes. The effect of total cross-referencing would be achieved without even one duplicate file of information. Finally, the participants recognized the plain truth that things in museums and in the world at large do not fall into mutually exclusive categories. To put this another way, the artificial lines between traditional disciplines were not to be used: all things were to be described in the same basic terms (not to be confused with "terminology") and left to classify themselves in accordance with each request for information.

In summary, since we cannot presume to predict the interests of future research, the hypothetical museum information system would be required to absorb and return all recorded information, including that which is present only implicitly. For example, museum records may hold the type and source of many pottery vessels. The geographical distribution of the type is then implicit and recoverable, even though it is nowhere stated. In the final analysis, the value of museum records should stem from this latent information, rather than from the specimen descriptions in which it is imbedded, although it is the latent record content that has been nearly impossible to retrieve from manual files.[3,4,5]

## Network Membership Extended

Once the initial dream of a regional transmission network had been laid to rest for

want of funds, it was quickly realized that geographical accident was not really a valid basis for association. Invitations for collaboration in the MCN were extended to the Smithsonian Institution and to ten of the largest art museums in the country. All but one responded with letters expressing some degree of willingness to cooperate. They were henceforth considered "members" of the network; the rolls were then closed temporarily to limit the administrative burden. No money had changed hands and no financial commitments were made.

Early in 1968, the author proposed that the network sponsor a trial implementation using the GRIPHOS programs to catalogue works selected almost at random from the files of as many of the member museums as possible. This was conceived both as a test of program implementation and as a demonstration of the workability of the visionary plan to merge existing records, not designed for computerization, into a coherent, indexible data base. The plan was accepted and implemented immediately. The National Gallery of Art and eleven of the original New York consortium members contributed a total of about 6,000 miscellaneous records during the next 18 months. No recataloguing was done; nevertheless, the records were successfully merged and interrogated for both explicit and latent information.[6,7,8] The success of this pilot data collection led two members of the network and one nonmember, the Arkansas Archeological Survey, to adopt GRIPHOS and begin transcription of their files in 1969.

Another event of crucial importance occurred at about this time. The United Nations Library adopted GRIPHOS as a tool for indexing its official documents. Without the massive financial support of this user, it would not have been possible to continue program development up to the present time.

## A Step Backward

One event of 1969 can only be regarded as a step backward, although it may have been a necessary step. After much urging, it was agreed that an outside organization with expertise in computer applications should survey MCN's needs and goals and chart its orderly development. The report, written from a standard business viewpoint, emphasized the need for limiting objectives, determining user needs exactly, and weighing each need against its cost. In short, its recommendations were completely contrary to MCN's long-range objective of unlocking all the information hidden in museum files and making it available to anyone for any purpose at any time. The report ended with a sketch for a ten-year program which would have cost at least a million dollars.

It had been supposed that such a report would lend the network credibility in the eyes of funding agencies, but no funds were forthcoming. The network was destitute. The staff departed, the office closed, and the files and library were moved to the registrar's office at The Museum of Modern Art, where the author was engaged in committing that museum's records to computer. There was still no income or budget, and the organization was so loose that no one really knew who the "members" were. Somehow, MCN's administrative committee continued to meet during the difficult years of 1970 and 1971, correspondence was answered, and the three institutions that had begun data conversion carried on. One eventually had to put the project on ice because of general financial difficulties, but it was replaced by a new user, the State of Florida Division of Archives, History, and Records Management. At the request of Professor Heller, the distribution to museums of GRIPHOS programs and documentation was taken over by the network.

The two underlying factors that made

existence possible were the base of operations at The Museum of Modern Art and the continuing support of GRIPHOS development by the United Nations. Together, they kept alive the chain of intellectual action and reaction between Heller and the museum users of GRIPHOS.[9]

There was at least one happy consequence of the network's abject poverty during those years. Because of it, no burdensome administrative superstructure developed.

## MCN Incorporates

The situation soon became intolerable. The administrative committee determined to incorporate the network, impose dues upon the members, and seek new funding. On September 20, 1972, incorporation papers having been drawn and filed, the administrative committee dissolved the consortium and reconstituted itself as the board of directors of the Museum Computer Network, Inc. On that day, the first four active members were inducted: the National Gallery of Art; the Arkansas Archeological Survey; the State of Florida Division of Archives, History, and Records Management; and The Museum of Modern Art. The latter had by then finished computerizing its fine arts catalogue and had begun on the catalogue of its film department.[10]

Like EDUCOM, the Museum Computer Network, Inc., is a nonprofit corporation with other nonprofit institutions as members. It is governed by a nine-member board and is open to museums and organizations with similar interests anywhere in the world. Depending upon the level of services required, annual dues range from $50 to $1000. As of April, 1975, there were 22 members.

Museums that had been associated with the consortium were invited to join the new corporation. Not all did, but others filled their places and there were 20 members when, at the beginning of 1974, MCN accepted an invitation to move its headquarters to the Center for Contemporary Arts and Letters at the State University of New York at Stony Brook. The location is ideal, because Professor Heller is working at Stony Brook on the continued development of GRIPHOS, still supported by his principal beneficiary, the United Nations Library.

This move, made possible not only by the University's invitation but also by two generous grants from the CBS Foundation, has given the network an office of its own and a full-time staff (of one) for the first time in four years. Because of the move, the network has been able to begin production of desperately needed operating manuals and also to conduct a training workshop for some 50 museum professionals. This last was partially funded by the National Museum Act (administered by the Smithsonian Institution).

## The Future of the Network

At this point, one may well ask, "What became of the network concept on which MCN was based?" The answer is that MCN has become a logical network. There are no linked computers, and the development of such technology is being left to others. The network has no plan to operate a transmission network of its own. Its task is rather to coordinate the transcription of museum records in such a way that they will be suitable for transmission by wire or satellite. The data bases under construction by various member institutions are too small as yet and too varied in subject matter to justify merger, but they are coherent in form and capable of merger with each other and with those to come.

The next major step, already programmed in some detail but not yet funded, will be the standardization of a technology for generalized data translation so that the records of members, in GRIPHOS format, can be merged not only among themselves but with the records that other museums are collecting under the control of other program systems. This step is indispensable if future transmission networks are to serve the whole community of museum users.

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## References


1. The Metropolitan Museum of Art. *Computers and Their Potential Applications in Museums.* New York: Arno Press, 1968.

2. Dauterman, C. C. "Sevres Porcelain Project – Hard Paste Index." *ICRH Newsletter,* vol. 3, no. 5, 1968.

3. Vance, D. "Museum Computer Network, the Second Phase." *Museum News,* vol. 48, no. 9, 1970.

4. Heller, J. "On Logical Data Organization, Card Catalogs, and the GRIPHOS Management Information System." *Museum Data Bank Research Report No. 3.* Rochester: Museum Data Bank Committee, 1974.

5. Chenhall, R. G. *Museum Cataloguing in the Computer Age.* Nashville: American Association for State and Local History, 1975.

6. IBM. *Building a Collection Data Bank at Museum Computer Network.* Application Brief GK20-0370, 1970.

7. –. *Computers in the Museum.* Application Manual GE20-0406, 1973.

8. Vance, D., and Heller, J. "Structure and Content of a Museum Data Bank." *Computers and the Humanities,* vol. 6, no. 2, 1971.

9. Vance, D. "Museum Computer Network, the Second Phase." *Museum News,* vol. 48, no. 9, 1970.

10. –. "Museum Computer Network, the Third Phase." *Museum News,* vol. 51, no. 8, 1973. □